

Notice of Allowability

Application No.

10/067,974

Applicant(s)

LI ET AL.

Examiner

David J. Steadman

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendments filed on 6/1/07 and 9/10/07.
2. ☒ The allowed claim(s) is/are 44 and 46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 9/20/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Appendix A.

DETAILED ACTION

Status of the Application

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/1/07 has been entered.

[2] Claims 44 and 46 are pending in the application.

[3] The amendment to the claims, filed on 9/10/07, is acknowledged. This listing of the claims replaces all prior versions and listings of the claims.

[4] In view of the claim amendment filed on 9/10/07, the objection and rejections of record as set forth in the Office action mailed on 5/1/06 are withdrawn.

Information Disclosure Statement

[5] In reviewing this application, the examiner noted that reference AA1 of Form PTO-1449 mailed on 2/11/04 was not considered by the examiner. A copy of Form PTO-1449 is attached to the instant Office action, wherein reference AA1 has been considered.

Drawing Figures

[6] According to MPEP 608.02(w), "Where an application is ready for issue except for a slight defect in the drawing not involving change in structure, the examiner will prepare a letter to the applicant indicating the change to be made and **>include a marked-up copy of< the drawing >showing< the addition or alteration to be made. The marked-up copy of the drawing should be attached to the letter to the applicant >and a copy placed in the application file<. The correction must be made at applicant's expense.

Upon review of the application, it is noted that Figure 5A filed on 7/8/02 appears to inadvertently state "SEQ ID NO:10" at top left. According to the description of Figure 5A (p. 5, paragraph 13), the figure shows nucleotide (SEQ ID NO:7) and amino acid sequence (SEQ ID NO:8) of ddh and would appear to be unrelated to SEQ ID NO:10. See attached "marked-up" copy of Figure 5A in Appendix A. Appropriate correction is required.

Examiner's Amendment to the Claims

[7] An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Duane A. Stewart III on 11/16/07.

[8] The application has been amended as follows:

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In claim 44, parts (a), (b), (c), and (d), insert ---the nucleotide sequence of---
following ---with---

Reasons for Allowance

[9] The instant claims are drawn to nucleic acids encoding *C. glutamicum* polypeptides of the L-lysine biosynthetic pathway. SEQ ID NO:1 is identified in the specification as "ask" or "K" and encodes an aspartokinase polypeptide; SEQ ID NO:3 is identified in the specification as "asd" or "D" and encodes an aspartate-semialdehyde dehydrogenase polypeptide; SEQ ID NO:5 is identified in the specification as "dapB" or "B" and encodes an dihydrodipicolinate reductase polypeptide; and SEQ ID NO:7 is identified in the specification as "ddh" or "H" and encodes a diaminopimelate dehydrogenase polypeptide. See specification at pp. 4-5. NRRL-B30410 is identified in the specification as being a *Corynebacterium* transformed with vector pK184-KDBH (pp. 31-32, paragraphs 108-109); NRRL-B30458 is identified in the specification as being a *Corynebacterium* transformed with vector pDElia2_{FC5}-KDB (pp. 30-31, paragraphs 106-107); NRRL-B30459 is identified in the specification as being a *Corynebacterium* transformed with vector pDElia2_{FC5}-KDB2 (pp. 32-33, paragraphs 110-111); and NRRL-B30522 is identified in the specification as being a *Corynebacterium* transformed with vector pDElia2_{FC5}-KDB2HP1L (pp. 34-35, paragraphs 112-113).

The examiner can find no teaching or suggestion in the prior art of record for the nucleic acid of SEQ ID NO:1, 3, 5, or 7 or the host cells deposited as NRRL-B30410, NRRL-B30458, NRRL-B30459, or NRRL-B30522. It is noted that the requirements for

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deposit of biological material have been satisfied – see particularly the specification amendment filed on 6/14/05, the remarks filed on 6/14/05 at p. 29, and the statement pursuant to MPEP 2404.01 filed on 6/14/05.

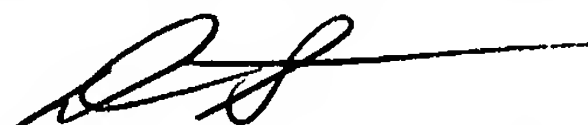
Therefore, claim 44, drawn to an isolated polynucleotide comprising a combination of SEQ ID NO:1, 3, 5, and 7, and claim 46, drawn to the host cells deposited as NRRL-B30410, NRRL-B30458, NRRL-B30459, or NRRL-B30522, are allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Steadman whose telephone number is 571-272-0942. The examiner can normally be reached on Monday to Friday, 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr Bragdon can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Steadman, Ph.D.
Primary Examiner
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APPENDIX A

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App. No. 10/067,974, filed February 8, 2002
Int. No. 1533,2640001/MAC/M47, Group Art Unit: 1645
Inventors: Li et al.; Tel: 202/371-2660
Title: Polynucleotide Constructs for Increased Lysine
Production

~~SEQ ID NO: 10~~ Amino Acid sequence of ddh

SEQ ID NO: 7 1 ATGGATTTCGGTAAGCTCGACCAGCACAGTGCCACCACAATTTCCACCATTACAAGAAC 60
SEQ ID NO: 8 1 M H F G K L D Q D S A T T I L E D Y K N
61 ATGACCAACATCCGCTAGCTATCGTAGGGTACGGAACCTGCGACCCAGCGTCGAAAAG 120
61 M T N I R V A I V G Y G N L G R S V E K
121 CTTATTGCCAAGCAGCCGACATGGACCTTGTAAGGAATCTTCTCGCGCCGGCCACCCTC 180
121 L I A K Q P D M D L V G I F S R R A T L
181 GACACAAAGACGCCAGTCTTTGATGTGCGCGACGTGGACAAGCACCCCGACGACGTGGAC 240
181 D T K T P V F D V A D V D K H A D D V D
241 GTGCTGTTCTGTGCATGGGCTCCGCCACCGACATGCCTGAGCAGGCACCAAAGTTCGCG 300
241 V L F L C M G S A T D I P E Q A P K F A
301 CAGTTCGCCTGCACCGTAGACACCTACCACAACCACCGGACATCCCAGGCCACCGCCAG 360
301 Q F A C T V D T Y D N H R D I P R H R Q
361 GTCATGAACGAAGCCGCCACCGCAGCCGCAACGTTGCACTGGTCTGTACCGGCTGGGAT 420
361 V M N E A A T A A G N V A L V S T G W D
421 CCAGGAATGTTCTCCATCAACCGGTCTACGCAGCCGCACTCTTAGCCGAGCACCAGCAG 480
421 P G M F S I N R V Y A A A V L A E H Q Q
481 CACACCTTCTGGGGCCAGCTTTGTACAGGGCCACTCCGATCCTTTGCGACGCATCCCT 540
481 H T F W G P G L S Q G H S Q A L R R I P
541 GCGTTCAAAAGGCcGTCCAGTACACCTGCCATCCGAAGAaGCCCTGCAAAAGGCCCGC 600
541 G V Q K A V Q Y T L P S E E A L E K A R
601 CGTCGCGAAGCCGGCGACCTcACCGGAAAGCAAAACCAGAAGCGCCAATGCTTCGTGGTT 660
601 R G E A G D L T G K Q T H K R Q C F V V
661 CCCGATGCGGCCGACACGAGCGCATCGAAAACGACATCCGCACCATCCCTGATTACTTC 720
661 A D A A D H E R I E N D I R T M P D Y F
721 GTTGGCTACGAAGTCGAAGTCAACTTCATCGACGAAGCAAGCTTgGACgCCGAGCACACC 780
721 V G Y E V E V N F I D E A T L D A E H T
781 GGGATGCCACACGGcGGACACGTGATcACCACCGGCGACACCGGTGGCTTCAACCACACC 840
781 G M P H G G H V I T T G D T G G F N H T
841 GTGGAATACATCCTgAAGCTGGACCGAAACCCAGATTTACCGCTTCtTCACAGATCCCT 900
841 V E Y I L K L D R N P D F T A S S Q I A
TTCGGcCGCCAGCTCACCCCATGAAGCAGCAGGGCCAAAGCGgtGCTTTACCGTGCTC

FIG 5A